



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,260	10/20/2003	Shinichi Imade	SAS2-PT061	2883
3624	7590	06/03/2005	EXAMINER	
VOLPE AND KOENIG, P.C. UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			BLACKMAN, ROCHELLE ANN J	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/689,260

**Applicant(s)**

IMADE, SHINICHI

**Examiner**

Rochelle Blackman

**Art Unit**

2851

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –**  
**Period for Reply**

### A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,29-33,57,60,63-65 and 72-79 is/are pending in the application.
- 4a) Of the above claim(s) 6-28,34-56,58,59,61,62 and 66-71 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,29-33,57,60,63-65 and 72-79 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/20/03, 1/29/04, and 3/11/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Species 3(B) (Fig. 17) drawn to claims 1-5, 29-33, 57, 60, 63-65, and 72-79 in the reply filed on March 11, 2005 is acknowledged.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 29-33, 57, 60, 63-65, and 72-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori (U.S. Patent No. 4,669,817) in view of Tiao (U.S. Patent No. 6,227,669).

Regarding claims 1, 29, 57, 60, 63-65, and 72-77, Mori discloses an illumination apparatus (for example, see Fig. 20) illuminating an objective illumination region, comprising: a plurality of illuminants (see 100, 100' of Fig. 20) having light-emitting surfaces radiating diffused light; at least one optical member / means or plurality of optical members/ means which each have incident end surfaces and outgoing end surfaces (see 146, 148 of Fig. 20) configured to guide the diffused light to the objective

Art Unit: 2851

illumination region / configured to radiate the diffused light incident from the incident end surfaces and guide the diffused light to the objective illumination region; a movable section / movable means (see 152 of Fig. 20) configured to drive the optical member so as to be rotatable around the center of the circumference serving as a rotation center; and a lighting control section / lighting control means ("illuminants" 100 and 100' are controlled by the rotation of the "optical member/ means/ plurality of optical members/ means" 146 and 148) configured to control a light-emitting timing of the plurality of illuminants, wherein the movable section / movable means and the lighting control section / lighting control means operate together such that the quantity of light per unit time of the diffused light guided to the objective illumination region is within a predetermined range (see function of 100, 100', 146, 148, and 152 in Fig. 20); wherein the movable section/ movable means and the lighting control section/ lighting control means operate together such that an area of the light-emitting surface emitting the diffused light for the light guided to the illumination region is within a predetermined range in variations in time (see function of 100, 100', 146, 148, and 152 in Fig. 20); wherein the respective outgoing end surfaces of the plurality of optical member / plurality of optical means are in rotation symmetrical relationship with respect to the center of the circumference (see function of 100, 100', 146, 148, and 152 in Fig. 20).

Regarding claims 2 and 30, Mori wherein the lighting control section lights the illuminants whose light-emitting surfaces are positioned at an area on the illuminant substrate which is guided by the optical member (see function of 100, 100' and 146, 148 of Fig. 20).

Regarding claims 3 and 31, Mori discloses wherein a number of the illuminants which are lit is always the same number (see 100, 100' of Fig. 20).

Regarding claims 4, 5, 32, and 33, Mori discloses two optical members (see 100 and 100' of Fig. 20) are provided and are made to be one set, wherein at least one set is provided, and the optical member of the set guides the diffused light radiated at a position on the circumference which is point symmetrical with respect to the rotation center, to the objective illumination region a plurality of optical members / plurality of optical means which each have incident end surfaces and outgoing end surfaces, and which are configured to radiate the diffused light incident from the incident end surfaces and guide the diffused light to the objective illumination region (see function of 100 and 100' in Fig. 20).

Regarding claims 78 and 79, Mori disclose where the optical member comprises an optical rod (see 100 and 100' of Fig. 20).

Regarding claims 1, 4, 5, 29, 32, 33, 57, 60, 63-65, and 72-77, Mori does not appear to disclose an image projection apparatus comprising the illumination apparatus; an illuminant substrate in which the illuminants are disposed so as to be set in array on the circumference; wherein the number of the illuminants disposed on the illuminant substrate is an odd/ or even number; wherein the optical member includes a tapered rod, in which an area of the outgoing end surface thereof is larger than an area of the incident end surface thereof; a display device disposed at an objective irradiation region

of the illumination apparatus; and a projection lens configured to project an image formed at the display device on a screen.

Tiao teaches providing an image projection apparatus (see FIGS. 2-9) comprising an illumination apparatus; an illuminant substrate (see 202 of FIG. 2A and 2C; 710 of FIG. 7A; and 810 of FIG. 8A) in which the illuminants are disposed so as to be set in array on the circumference; wherein the number of the illuminants disposed on the illuminant substrate is an odd/ or even number (see 204 of FIGS. 2A and 2C; 712 of FIG. 7A; and 812 of FIG. 8A); wherein the optical member includes a tapered rod (see 822 of FIG. 8A and 8B) in which an area of the outgoing end surface thereof is larger than an area of the incident end surface thereof; a display device (see 212 of FIGS. 2A and 2C; 750 of FIG. 7A; 850 of FIG. 8A; and 910a-c of FIG. 9) disposed at an objective irradiation region of the illumination apparatus; and a projection lens (see 930 of FIG. 9) configured to project an image formed at the display device on a screen.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the Mori reference with the salient features of the Tiao, for the purpose of providing an illumination device with employs a low power light emitting device as a light source and further, to provide an image projection apparatus that can obtain a high efficient projection display with a low fabrication cost (see col. 1, lines 55-57 and col. 2, lines 4-8).

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB

  
**JUDY NGUYEN**  
**SUPERVISORY PATENT EXAMINER**